## ABSTRACT

Microfabricated heaters for microfluidic devices for lab-on-a-chip applications comprising channels using deposited conductors such as sputtered metal, alloys, polymers and composites thereof; or conductors prepared by ion implantation, and methods for fabricating same are disclosed. Rapid heating to temperatures above 360 °C and rapid cooling is possible using these microheaters. Repeated heating does not lead to the microheater devices weakening or burning out. Preferred embodiments include application of spin-on-glass on the microheater surface.